

Amendments to the Claims

The following Listing of Claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (currently amended): A machine-implemented bar coding method, comprising:
generating a corroborative signed message from information to be encoded; and
modulating a base image with a graphical encoding of the signed message to produce a marked image by

dividing the base image into multiple image areas,
segmenting at least some of the image areas into multiple groups based on
pixel values in the image areas, and
encoding the segmented image areas with sets of two-dimensional code
patterns to graphically encode the corroborative signed message in the
marked image, wherein each set of code patterns encodes a respective
corresponding group of image areas.

Claim 2 (original): The method of claim 1, wherein generating the signed message comprises producing a cryptographic hash from the information to be encoded.

Claim 3 (original): The method of claim 2, wherein generating the signed message comprises encrypting the cryptographic hash to produce a digital signature.

Claim 4 (original): The method of claim 3, wherein the cryptographic hash is encrypted with a private key.

Claim 5 (original): The method of claim 3, wherein generating the signed message comprises concatenating the information to be encoded and the digital signature.

Claim 6 (original): The method of claim 1, wherein the signed message includes a public key certificate.

Claim 7 (currently amended): A machine-implemented bar coding method, comprising:
generating a corroborative signed message from information to be encoded; and
modulating a base image with a graphical encoding of the signed message to produce a marked image ~~The method of claim 1~~, wherein the base image includes an image of a handwritten signature.

Claim 8 (original): The method of claim 7, wherein modulating the base image comprises vectorizing the handwritten signature image.

Claim 9 (original): The method of claim 8, further comprising obtaining a set of base control points for the vectorized handwritten signature image, and encoding the information by displacing the base control points to obtain a marked set of control points from which the marked image is produced.

Claim 10 (original): The method of claim 1, further comprising extracting the signed message from the marked image.

Claim 11 (original): The method of claim 10, wherein the signed message is extracted from the marked image based upon a comparison of the marked image and the base image.

Claim 12 (original): The method of claim 10, further comprising decoding the extracted signed message to produce a decoded message.

Claim 13 (original): The method of claim 12, further comprising extracting from the decoded message an encrypted original cryptographic hash and the encoded information.

Claim 14 (original): The method of claim 13, further comprising decrypting the encrypted original cryptographic hash with a public key.

Claim 15 (original): The method of claim 14, further comprising authenticating the extracted information by producing a new cryptographic hash from the extracted information, and comparing the new cryptographic hash with the original cryptographic hash.

Claim 16 (original): A bar coding system, comprising an encoder configured to:
generate a corroborative signed message from information to be encoded; and
modulate a base image with a graphical encoding of the signed message to produce a marked image by

dividing the base image into multiple image areas,
segmenting at least some of the image areas into multiple groups based on
pixel values in the image areas, and
encoding the segmented image areas with sets of two-dimensional code
patterns to graphically encode the corroborative signed message in the
marked image, wherein each set of code patterns encodes a respective
corresponding group of image areas.

Claims 17-19 (canceled)

Claim 20 (currently amended): A computer program residing on a computer-readable medium and comprising computer-readable instructions for causing a computer to:
generate a corroborative signed message from information to be encoded; and
modulate a base image with a graphical encoding of the signed message to produce a marked image by

dividing the base image into multiple image areas,
segmenting at least some of the image areas into multiple groups based on
pixel values in the image areas, and
encoding the segmented image areas with sets of two-dimensional code
patterns to graphically encode the corroborative signed message in the

marked image, wherein each set of code patterns encodes a respective corresponding group of image areas.

Claim 21 (new): The method of claim 8, wherein the vectorizing comprises fitting a sequence of spline curves to the handwritten signature.

Claim 22 (new): The system of claim 16, wherein the base image includes an image of a handwritten signature, and the encoder is configured to vectorize the handwritten signature image.

Claim 23 (new): The system of claim 22, wherein the encoder is configured to obtain a set of base control points for the vectorized handwritten signature image and encode the information by displacing the base control points to obtain a marked set of control points from which the marked image is produced.

Claim 24 (new): The computer program of claim 20, wherein the base image includes an image of a handwritten signature, and the computer-readable instructions cause the computer to vectorize the handwritten signature image.

Claim 25 (new): The computer program of claim 24, wherein the computer-readable instructions cause the computer to obtain a set of base control points for the vectorized handwritten signature image and encode the information by displacing the base control points to obtain a marked set of control points from which the marked image is produced.